

TWO NEW DISTICHOUS-BRACTED CALATHEA (MARANTACEAE) SPECIES FROM CENTRAL AMERICA

Helen Kennedy

UCR Herbarium
Department of Botany and Plant Science
University of California, Riverside
Riverside, California 92521 U.S.A.
ganders@mail.ubc.ca

ABSTRACT

Calathea ravenii H. Kenn., sp. nov. and **Calathea oscariana** H. Kenn., sp. nov. are described as new for inclusion in *Flora Mesoamericana*. *Calathea ravenii* is endemic to Panama, known only from the type locality, Puerto Obaldia, in Comarca San Blas (= Comarca Kuna Yala). It is distinguished from other Panamanian distichous-bracted species by the elliptic leaf blades, length 2.2–2.36 × width, the greenish, glabrous bracts with non-recurved apical margins, the single membranous bracteole per flower pair, and pale yellow flowers. *Calathea oscariana*, endemic to Guatemala, occurs in premontane wet forest. *Calathea oscariana* differs from the closely related *C. sclerobracteata* K. Schum. by the non-recurved vs. recurved bract margin, the bracts minutely appressed tomentose throughout with hairs more dense at base vs. densely appressed tomentose along apical margin, the rest glabrous, and the usually greater length to width ratio of the blade, (1.52–)1.94–2.47:1 vs. 1.59–1.87:1; and from *C. crotalifera* S. Watson by the smaller bracts (2.2–2.5 × 3.2–4.2 vs. 2.9–3.5 × 4.2–5.4 cm) and cream-colored vs. yellow, yellow-orange or bronze bracts.

RESUMEN

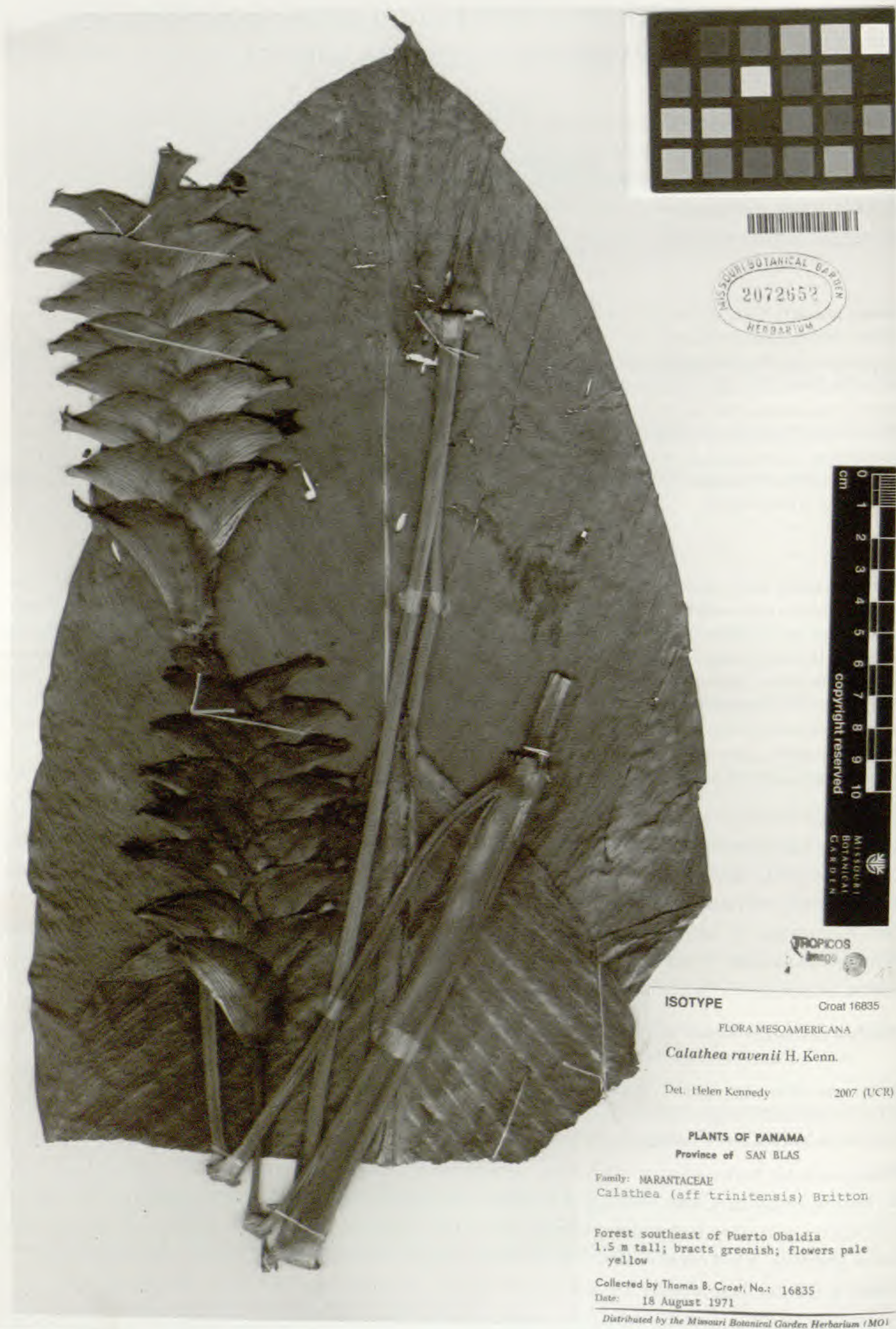
Calathea ravenii H. Kenn., sp. nov. y **Calathea oscariana** H. Kenn., sp. nov. son descritas como nuevas para su inclusión en Flora Mesoamericana. *Calathea ravenii*, endémica de Panamá, es conocida solamente de la localidad del tipo, Puerto Obaldia, en la Comarca San Blas (= Comarca Kuna Yala). Se diferencia de otras especies dístico-bracteadas de Panamá, por la lámina de la hoja elíptica, 2.2–2.36 veces tan larga como ancha, las brácteas verdes, glabras y con los márgenes apicales no recurvados, una bractéola membranácea por cada par de flores y las flores amarillo pálidas. *Calathea oscariana*, endémica de Guatemala, crece en el bosque premontano muy húmedo. *Calathea oscariana* difiere de la estrechamente relacionada *C. sclerobracteata* K. Schum. por las brácteas con los márgenes apicales no recurvados vs. recurvados, por las brácteas diminutamente tomentosas a lo largo de las brácteas con los pelos más densos en la base vs. densamente tomentoso en el margen apical, el resto glabro, y generalmente la relación de largo/ ancho de la lámina más grande, (1.52–)1.94–2.47: 1 vs. 1.59–1.87: 1; y de *C. crotalifera* S. Watson por las brácteas más pequeñas (2.2–2.5 × 3.2–4.2 vs. 2.9–3.5 × 4.2–5.4 cm) y cremosas vs. amarillas, amarillo-anaranjadas o bronceadas.

In Standley and Steyermark's (1952) *Flora of Guatemala*, they listed 13 native species and one cultivated one, *C. warscewiczii* (L. Mathieu) Planch. & Linden, none of which were endemic. Currently 18 species are recognized as native, with one, herein described, endemic. Of these, four additional *Calathea* species, *C. matudae* H. Kenn., *C. oscariana*, *C. sclerobracteata* and *C. soconuscum* Matuda, have been collected in Guatemala as well as an additional *Stromanthe*, *S. tonckat* (Aubl.) Eichler. The herein described *C. ravenii*, presently known only from Panama, is included in the current total of 67 Marantaceae species recognized for Panama.

Calathea ravenii H. Kenn., sp. nov. (**Fig. 1**). TYPE: PANAMÁ. SAN BLAS: SE of Puerto Obaldia, forest, 18 Aug 1971, T.B. Croat 16835 (HOLOTYPE: SCZ 1998; ISOTYPE: MO 2072652).

Calathea ravenii differs from the closely related *C. lasiostachya* Donn. Sm. in the glabrous vs. villous, appressed tomentose or hispid abaxial bract surface and smaller length to width ratio of the leaf blade (2.2–2.36:1 vs. > 3.5:1); from *C. caesariata* H. Kenn. by the glabrous vs. villous adaxial leaf surface; and from *C. crotalifera* by the longer (4–5.3 vs. 2.9–3.5 cm) green vs. yellow, yellow-orange or bronze bracts.

Plants perennial, herbaceous, ca. 1.5 m high; stem glabrous in upper portion. **Leaves** several basal and 1 cauline; leaf sheath not auriculate, very sparsely minute tomentose on sides, hairs 0.1 mm or glabrous throughout, ca. 20–21 cm in cauline leaf; petiole glabrous, 29–42 cm in cauline leaf; pulvinus broadly ellipsoid in cross-section, glabrous, 3.3–4 cm in cauline leaf; leaf blade pliable, herbaceous, elliptic, apex obtuse with a narrow acumen to 1.5 cm, base slightly unequal, obtuse, shortly attenuate, 46–54 × 21–24 cm, length:width ratios



ISOTYPE

Croat 16835

FLORA MESOAMERICANA

Calathea ravenii H. Kenn.

Det. Helen Kennedy

2007 (UCR)

PLANTS OF PANAMA

Province of SAN BLAS

Family: MARANTACEAE

Calathea (aff *trinitensis*) BrittonForest southeast of Puerto Obaldia
1.5 m tall; bracts greenish; flowers pale
yellow

Collected by Thomas B. Croat, No.: 16835

Date: 18 August 1971

Distributed by the Missouri Botanical Garden Herbarium (MO)

FIG. 1. *Calathea ravenii* H. Kenn. Isotype (Croat 16835, MO). Photo provided by Missouri Botanical Garden.

2.2–2.36:1 in cauline leaves, ca. 17 lateral veins per 3 cm and 15–19 cross-veinlets per 5 mm (both measured at midpoint of sides of blade), adaxial surface green, glabrous, midrib minutely pubescent in basal half, hairs 0.1 mm, abaxial surface nearly glabrous, minute hairs to 0.2 mm along some lateral veins close to midrib, midrib below minutely tomentose along sides, hairs 0.1–0.2 mm. **Inflorescences** 1–2 per shoot, first one terminal, subsequent one axial, imbricate, strongly complanate, subrectangular, narrower apically, 12.5–16 × 7.5–8 cm; peduncle glabrous, 22–36 cm. **Bracts** 14–16, herbaceous, distichous, overlapping at base when live, rachis usually not visible, broadly ovate in basalmost, transverse broadly elliptic in subsequent ones to broadly elliptic in uppermost, apex rounded with acumen in basalmost one, rounded to broadly obtuse in upper ones, margin straight (not recurved), 4–5.3 × 3.6–5.3 cm, each bract subtending 3 or more flower pairs, abaxial surface of bracts green, glabrous, adaxial surface glabrous; bicarinate prophyll membranous, rectangular-elliptic, apex rounded to subtruncate, glabrous, 3–3.2 × 1.0–1.5 cm, 0.9–1.1 cm wide, carina to carina; secondary bract membranous, elliptic, apex rounded to minutely tridentate, glabrous, 2.6–3 × (0.85–) 1.25–1.5 cm; bracteole 1 per flower pair, medial, membranous, 1.1–1.35 × 0.15–0.2 cm. **Flowers** open spontaneously, pale yellow (fide Croat 16835). **Sepals** membranous, narrowly obovate, obtuse, apical margin incurved, glabrous, 18–20 × 3–4 mm. **Corolla** tube glabrous, 26–32 mm; corolla lobes subequal, elliptic, obtuse to 90°, glabrous, 12–14 × 3.5–5 mm. **Staminodes** 3; outer staminode spatulate, 9–10 × 6–8 mm; callose staminode rounded apically, ca. 11.5 mm; cucullate staminode 6–8 mm; stamen with lateral, petaloid appendage, 1 mm wide, anther 2.5 mm; ovary smooth, glabrous, ca. 2.5 × 1.5 mm. **Capsule** unknown.

Distribution and habitat.—*Calathea ravenii* is known only from the type collection near Puerto Obaldia in wet tropical forest habitat. Considering the proximity of Puerto Obaldia to the border with Colombia, it is highly likely it will be eventually found there as well. It is apparently uncommon, as in two days collecting in July, 2005, in the vicinity of Puerto Olbalda, we failed to find any plants of it, even sterile ones, though another, previously unknown, undescribed species was found.

Discussion.—*Calathea ravenii* belongs to *Calathea* G. Meyer section *Calathea*, having the characteristic habit of several basal leaves and a cauline leaf subtending the 1-several distichous-bracted inflorescences. It is distinguished from other Panamanian species of *Calathea* with distichous, complanate, bracts by the elliptic leaf blades, length 2.2–2.36 × width, the greenish, glabrous bracts with non-recurved apical margins, 4–5.3 × 3.6–5.3 cm, the single membranous bracteole per flower pair, and pale yellow flowers. A comparison of five of the distichous-bracted Panamanian species is given in Table 1 (Kennedy 2011: 202). It is readily distinguished from the other three distichous-bracted species not mentioned in the table, *C. lasiostachya*, *C. caesariata* and *C. similis* H. Kenn. by its glabrous, green bracts and the glabrous adaxial surface of the leaf blade.

Etymology.—The specific epithet *ravenii*, is in honor of Dr. Peter Raven, director emeritus of the Missouri Botanical Garden. It is with deep gratitude that I have the privilege of naming a species in his honor as he was instrumental in my choosing the Marantaceae initially as an OTS field project and encouraging me to continue this for my PhD research, besides indirectly introducing me to my partner. I am glad to finally be able to thus acknowledge the debt of gratitude I owe for his help throughout my career, and that of numerous other botanists, in this manner.

Calathea oscariana H. Kenn., sp. nov. (**Fig. 2**). TYPE: GUATEMALA. ALTA VERAPAZ: Cobán, planta cultivada, 1370 m, 27 Jul 1994, J. Véliz & M. Véliz 94.3926 (HOLOTYPE: BIGU 002395).

Calathea oscariana differs from the most closely related species, *C. sclerobracteata*, by the erect, non-recurved, vs. recurved bract margins, the bracts minutely appressed tomentose throughout with hairs more dense at base vs. densely appressed tomentose along apical margin with the rest glabrous and from *C. crotalifera* by the cream-colored vs. yellow, yellow-orange or bronze colored bracts and its smaller, 2.2–2.5 × 3.2–4.2 vs. 2.9–3.5 × 4.2–5.4 cm, bracts.

Plants perennial, rhizomatous, caulescent, herbs, 2 or more m high. **Leaves** several, basal, and 1 cauline above an elongate stem internode; leaf sheath not auriculate, green, appressed tomentose, hairs to 1 mm, very densely tomentose to sericeous at very base in cauline leaves, 16–25 cm in cauline leaf; petiole green, appressed tomentose in basal ¼, subglabrous to glabrous apically 47–60 cm in cauline leaf; pulvinus glabrous except for row of minutely tomentose hairs adaxially, hairs ca. 0.2 mm, glabrous near junction with petiole, 5–7 cm in



FLORA MESOAMERICANA
Calathea crotalifera S. Watson

Det. Helen Kennedy 2006 (UBC)

94.3926



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Escuela de Biología, USAC

Calathea insignis Peters in Mart
MARANTACEAE

GUATEMALA, Alta Verapaz, Cobán
Altitud 1,370 msnm.
Planta cultivada, utilizada para la elaboración de tamales (Envoltorio).
Col. J y M. Véliz 27/VII/1994
Det. M. Véliz 30/VIII/1994

94.3926

FIG. 2. *Calathea oscariana* H. Kenn. Holotype (J. Véliz & M. Véliz 94.3926, BIGU). Photo provided by Mario Véliz (BIGU).

cauline leaves; leaf blade firm, coriaceous, ovate, apex obtuse to rounded with somewhat eccentric acumen, base rounded, shortly abruptly attenuate, 40–58.5 × 16.2–35 cm, length/width ratio: (1.52–)1.94–2.47; adaxially green, glabrous except minutely tomentose at apex, midrib minutely tomentose; abaxial leaf surface sparsely minutely pilose, hairs not felt, ca. 0.2 mm, more prevalent on and along lateral veins, midrib densely appressed tomentose along sides basally. **Inflorescences** 1–3 per shoot, first one terminal, subsequent ones axial, imbricate, rectangular, strongly complanate, 10–17.4 × 3.6–4.2(–4.9) cm; peduncle green, densely appressed tomentose just below inflorescence, hairs sparse toward base, 20–28.5 cm. **Bracts** 14–26, distichous, transverse elliptic, apex retuse, apical margins straight, not recurved, 2.2–2.5 × 3.2–4.2 cm, bracts overlapping at base, rachis not or only occasionally visible, abaxial surface of bracts cream-colored, slightly darker, yellowish tan, along margins, with faint pink tinge at apex, near base and in basal portion of margin, minutely appressed tomentose, densely so at base adjacent to peduncle, adaxial surface glabrous except for a few scattered hairs near apex; bicarinate prophyll membranous, ovate, apex obtuse, sides and adjacent surface of carina densely appressed tomentose, center back glabrous, inner carina surface minutely pilose along margin, 1.6–1.8 × 0.8–1.1 cm, 0.65–0.9 cm wide, carina to carina; secondary bract membranous, elliptic, apex retuse, appressed pilose along margins and at apex, central portion glabrous; bracteole 1 per flower pair, medial, apical portion somewhat flattened, central portion thickened. **Sepals** membranous, elliptic, apex obtuse, margins infolded, pale yellow, glabrous, 15–17 × 3–3.5 mm. **Corolla** tube light yellow, sparsely appressed pilose, hairs not uniformly arranged but in more or less vertical bands, 13–15 mm; corolla lobes elliptic, obtuse, light yellow, minutely pilose, 9–11 × 3.5–4.5 mm. **Staminodes** 3, yellow-orange, outer staminode apex rounded, 8 × 6 mm; callose staminode apex obtuse with narrow, finger-like acumen, apical half tinged pink, 8–11 × ca. 4 mm; cucullate staminode ca. 6 mm; stamen yellow-orange with lateral petaloid appendage, anther yellow, ca. 2 mm. Style and stigma yellow-orange; ovary smooth, glabrous except for minute tufts of hairs just below sepal junction, ca. 2.2–3 × 1.5 mm. **Capsule** unknown.

Additional specimens examined: **GUATEMALA. Alta Verapaz:** Cobán, cultivada, 1350 m, 29 Jul 1994, J. Véliz & M. Véliz, 94.3983B (BIGU); **Izabal:** Livingston, Quebrada seca, dentro la selva, 800 m, 27 Jun 1998, M. Véliz 98.6192 (BIGU). **Chiquimula:** Chiquimula, Olopa, Las Palmas, cultivada dentro de cafetales o áreas con banano, 1300 m, 18 May 1999, M. Véliz 99.7115 (MEXU 998111). **Quetzaltenango:** Volcán Lacandón, Finca Vista Alegre, 1450 m, 14°48'45"N, 91°45'1.4"W, 11 Jun 2005, M. Pérez 409 (USCG).

Distribution and habitat.—*Calathea oscariana* is endemic to Guatemala, occurring in the Departments of Alta Verapaz, Chiquimula and Quetzaltenango in montane wet forest from 800–1450 m. The collections from Alta Verapaz and Chiquimula were noted as being cultivated at those localities.

DISCUSSION

Calathea oscariana, like *C. ravenii* and *C. sclerobracteata*, belongs to *Calathea* G. Meyer section *Calathea*. It is most closely related to *C. sclerobracteata*, differing from it in the erect, non-recurved, vs. recurved bract margins, the bracts minutely appressed tomentose throughout with hairs more dense at base vs. densely appressed tomentose along apical margin with the rest glabrous, and the usually greater length to width ratios of the cauline leaf blades, (1.52–)1.94–2.47:1 vs. 1.59–1.87:1. In *C. sclerobracteata*, the lowermost bract of the inflorescence is usually distanced from the second bract so that the rachis is visible, while in *C. oscariana* the first bract usually covers the base of second and the rachis is not visible. However, although commonly the case, it is not always so and other characters should be verified. Often in dried material, the bracts of *C. sclerobracteata* may shrink in such a way as to expose the rachis between the subsequent bracts and the recurved margins may be folded over in pressing, whereas in *C. oscariana* the upper bracts smoothly overlap, consistently covering the intervening rachis and margins remain flat. *Calathea oscariana* differs from *Calathea crotalifera* in bract color, cream-colored vs. yellow, yellow-orange or bronze and the smaller bracts, 2.2–2.5 × 3.2–4.2 vs. 2.9–3.5 × 4.2–5.4 cm. Both *C. oscariana* and *C. sclerobracteata* are found in the higher, montane habitats, 800–1500 m, whereas *C. crotalifera*, in Guatemala, is more commonly found in the lowlands, below 500 m, but is known to occur up to 760 m.

In Guatemala, both *C. oscariana* and *C. sclerobracteata* are cultivated for their leaves. On the labels for *C.*

oscariana (Véliz 99.7115, MEXU) and *C. sclerobracteata* (Véliz 99.7115B, BIGU), growing together under cultivation, are the notes: "Planta cultivada dentro de cafetales o áreas con banano, sus hojas son empleadas para envolver la masa de los tamales." Likewise, such cultivation is noted on the type specimen, "Planta cultivada utilizada para la elaboración de tamales (Envoltorio)" and similar on Véliz & Véliz 94.3983B (BIGU). Interestingly, such use is not restricted to the campo, as I was served a tamale wrapped in the leaves of *C. oscariana* at the buffet in my hotel in Guatemala City. The portion of leaf was saved and pressed for later comparison.

Etymology.—The specific epithet, *oscariana*, was recommended by Mario Véliz (BIGU), who collected the type and provided photos and scans of the new species, as a dedication to his friend Señor Oscar Archila Euler (+), "la persona que la colectó y la tiene actualmente cultivada en su casa. ..."

ACKNOWLEDGMENTS

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